

### **REMARKS/ARGUMENTS**

Claims 1-46 are pending in this application and presented for examination.

Claims 1 and 29 have been amended. Claim 1 has been amended to recite that the at least one anchor has a modified amino acid. Claim 29 has been amended to recite that the nucleic acid polymerase has an attachment complex comprising at least one anchor having a modified amino acid. No new matter has been introduced with the foregoing amendments. Reconsideration is respectfully requested.

#### **I. FORMALITIES**

Claim 1 has been amended to recite that the at least one anchor has a modified amino acid. Support is found, for example, on page 8, lines 11-13. Claim 29 has been amended to recite that the polymerase has an attachment complex comprising at least one anchor having a modified amino acid. Support is found, for example, in claim 1 as filed; and page 8, lines 11-13. As discussed therein, "[s]uitable anchors of the present invention include, but are not limited to, an amino acid, a modified amino acid, a peptide, a histidine tag, a histidine patch, an eptiope, and the like." In view of the foregoing support, Applicant respectfully requests that the amendments be entered.

In view of the amendment to claim 1, Applicant believes that claims 1, 3, 18, 19, 22-23 and 26 are now allowable. As there was an initial species election for search purposes, and the generic claim is now *allowable*, under MPEP § 806.04(d) all the claims drawn to species in addition to the elected species are now allowable. Further, under MPEP § 821.04, the methods for detecting incorporation of at least one NTP into a single primer nucleic acid molecule using the polymerase-nucleic acid complex of claim 1 must be rejoined and are also allowable.

Therefore, Applicant believes all the currently pending claims are allowable.

## II. REJECTION UNDER 35 U.S.C. § 102(b)

The Examiner has maintained the rejection of claims 1-3, 18-19 and 26 under 35 U.S.C. § 102(b) as allegedly being anticipated by Yao *et al.*, *Genes to Cells* (1996) 1 101-113 (Yao *et al.*). To the extent the rejection is applicable to the amended set of claims, Applicant respectfully traverses the rejection.

Under MPEP § 2131:

[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Yao *et al.* disclose a comparative study of properties of clamp loading, unloading and intrinsic stability of three naturally occurring sliding clamps. According to Yao *et al.*, the sliding clamps of chromosomal replicates are ring shaped proteins that encircle DNA and tether the replicase to the template for chain elongation.

Yao *et al.* teach clamps which are loaded, unloading, and the clamp is recycled. Figure 8 on page 109 of Yao *et al.* depicts clamps for the E-coli and human systems (in panel A), whereas panel B illustrates the T4 Phage system. As illustrated therein, the clamp associates for DNA synthesis and disassociates after synthesis is complete. The clamp, polymerase, and nucleic acid template are associated, but free in solution.

In contrast, current claim 1 has been amended to recite that the anchor of the polymerase attachment complex comprises a modified amino acid. As recited in the specification, "[s]uitable anchors of the present invention include, but are not limited to, an amino acid, a modified amino acid, a peptide, a histidine tag, a histidine patch, an epitope, and the like." (see, page 8, lines 11-13). This inventive feature is further illustrated in Figure 1A, wherein the polymerase 101 has at least one anchor 130 such anchor comprising for example, an amino acid, an epitope, a modified amino acid and the like, for attaching, for example, a topological tether. As Yao *et al.* do not teach a modified amino acid as currently taught and

claimed, the claims are not anticipated. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection.

### **III. FIRST REJECTION UNDER 35 U.S.C. § 103(a)**

The Examiner has rejected claims 19 and 22 under 35 U.S.C. § 103(a) as allegedly being obvious over Motz *et al.* and U.S. Patent No. 5,198,543 ("Blanco *et al.*"). To the extent the rejection is applicable to the amended set of claims, Applicant respectfully traverses the rejection.

Motz *et al.* teach a hybrid DNA polymerase, wherein the hybrid polymerase includes a proliferating cell nuclear antigen (PCNA) and a Taq DNA polymerase. The hybrid "most likely" tethers the enzyme to DNA. The hybrid in Motz *et al.* is no way "an anchor having a modified amino acid."

Blanco *et al.* do not supply the deficiencies of the primary reference. Blanco *et al.* do not teach an attachment complex, nor an anchor having a modified amino acid. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection.

### **IV. SECOND REJECTION UNDER 35 U.S.C. § 103(a)**

The Examiner has rejected claim 23 as allegedly being obvious over U.S. Patent No. 6,255,083 ("Williams") and Motz *et al.* To the extent the rejection is applicable to the amended set of claims, Applicant respectfully traverses the rejection.

As the Examiner is aware, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In the method of Williams, amplification of the nucleic acid is unnecessary (*see*, col. 1, lines 58-60). However, Motz *et al.* teach that the principles should be used to develop PCR enzymes (*see*, last line of Motz *et al.*). Because the purpose of the process in Motz *et al.* is

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unnecessary for the methods of Williams, there is no motivation to combine their teachings. Further, the hybrid of Motz *et al.* is in no way "an anchor having a modified amino acid." Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection.

**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,

  
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